



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,770	12/09/2003	Roger E. Ahnkiel	38190/270312	4264

826 7590 07/28/2005

ALSTON & BIRD LLP  
BANK OF AMERICA PLAZA  
101 SOUTH TRYON STREET, SUITE 4000  
CHARLOTTE, NC 28280-4000

EXAMINER

ADDISU, SARA

ART UNIT	PAPER NUMBER
----------	--------------

3722

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/731,770

Applicant(s)

AHRNKIEL ET AL.

Examiner

Sara Addisu

Art Unit

3722

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/9/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore,

-“non-cutting edge clearance” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

“E is referred to as “primary clearance angle”, on Page 10, line 4. Figure 3, shows E as being primary relief angle”.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

The disclosure is objected to because of the following informalities: "E is referred to as "primary clearance angle", on Page 10, line 4. Figure 3, shows E as being primary relief angle".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11, line 2 recites the limitation "right-hand helix and left-hand helix". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

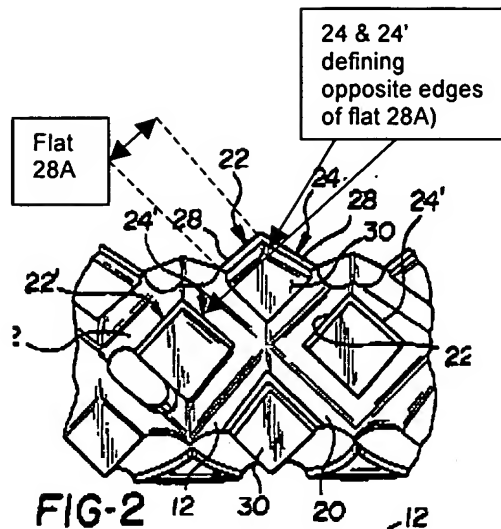
Claims 1-5, 7, 13-17, 19, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Campian (U.S. Patent No. 6,234,725).

Campian teaches a router for cutting material having a substantially cylindrical shaft member having a shank portion (16) and a cutting portion having a plurality of

Art Unit: 3722

cutting teeth (first and second) (22, 22' and, 24 & 24') disposed peripherally about a first/right hand helix (20) that intersects a second left hand helix (18) (Col. 2, lines 60-65 & figure 1). Campian also teaches cutting teeth having cutting clearance and non-cutting clearance on both the first and second cutting edges and first and second non-cutting edges (Col. 2, lines 1-2 and Col. 3, lines 9-14). Figures 1 and 2 show smooth transition between the first cutting edge of one cutting tooth (22) and first non-cutting edge of an adjacent cutting tooth (22') (the same applied to second cutting edge of one cutting tooth (24) and second non-cutting edge of an adjacent cutting tooth (24')). Furthermore, Campian teaches overlapping cutters (22 & 24 and 22' & 24') defined by the lands (flats) (28) that result in circular flat on the outside diameter (Col. 3, lines 29-38). The first cutting and non-cutting edges of cutting tooth (22) extend radially outward to define a length of the flat (28A) and the second cutting and non-cutting edges of cutting tooth (24 & 24') extend radially outward to define opposing edges of the flat (28A) (see diagram below). Additionally, Campian teaches right hand (first) and left hand (second) flutes having helix angle in the range of 30-60 degrees to the axis of the cylindrical body of the tool shank (Col. 1, lines 61-65) which meets the limitation of about 30 degrees for first helix and about -30 degrees for the second helix, claimed in claims 7 and 19.

Regarding claim 13, Examiner has taken Official Notice that it is well known in the art to use a motor to drive the rotation of a rotary tool about an axis as evidenced by Kopras, U.S. Patent No. 5,143,490, Col. 3, lines 48-51.



### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 8, 9, 11, 12, 18, 20, 21, 23, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campian (U.S. Patent No. 6,234,725, in view of Suzuki et al. (U.S. Patent No. 4,572,714).

Campian teaches a tool for cutting material having a cylindrical shaft member and a cutting portion with first/right hand helix and a second left hand helix (18), as set forth in the above rejection.

Art Unit: 3722

However, Campian is silent about the cutting and non-cutting clearance angles.

Suzuki et al. teaches a router bit having right hand helix and left hand helix with helix angle of less than 40 degrees. Suzuki et al. also teaches cutting and non-cutting clearance angle in the range of 10-20 degrees. ('714, Col. 3, lines 14-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Campian's invention such that the cutting and non-cutting clearance angle is in the range of 10-20 degrees as taught by Suzuki et al., for the purpose of obtaining a smooth cut face and preventing the vibration of the material ('714, Col. 3, lines 14-17).

Regarding claims 6, 11, 12, 18, 23, 24 and 26, Campian discloses the claimed invention except for the number of teeth along the left hand and right hand helix as well as cutting tooth length and flat length. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the number of teeth between the left hand and right hand helix as well as the length of the cutting tooth depending on the application, i.e. type of cut/finish desired and type of material being machined, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. Applicant should further note that Specification gives no criticality to the claimed limitation (see Page 9, line 1 and Page 8, line 31).

Art Unit: 3722

Claims 10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campian (U.S. Patent No. 6,234,725, in view of MacArthur (U.S. Pub. No. 2005/0105973).

Campian teaches a tool for cutting material as set forth in the above 102 (b) rejection.

However, Campian fails to teach the routing tool comprising H-10-F solid carbide.

MacArthur teaches many rotary cutting tools being fabricated from various commercial grades of solid carbide and carbide alloy (2005/0105973, Page 2, paragraph 34, lines 1-2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Campian's invention such that the tool is fabricated from various commercial grades of solid carbide (which meets the limitation H-10-F solid carbide) as taught by MacArthur for the purpose of machining parts formed from softer aluminum to harder stainless steels and related alloys (2005/0105973, Page 2, paragraph 34, lines 1-4).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.




Art Unit: 3722

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu  
(571)272-6082

SA.

  
BOYER D. ASHLEY  
PRIMARY EXAMINER